LABORATORY BULLETIN

MONTANA STATE DEPARTMENT OF HEALTH
HELENA, MONTANA

No. 3 - March 11, 1968 THE LABORATORY BULLETIN

This series of bulletins is to acquaint Medical Laboratories with services available in the Microbiology Laboratory Division of the State Department of Health. A non-interpretive listing is misleading because of the wide variation within our state as to what is available locally. However, from these bulletins there may evolve a "manual" of the State Laboratory. It is sent to all Medical Laboratories in Montana and information in the bulletin should be transmitted to physicians which they serve.

"Medical Laboratory" means any facility for microbiological, serological, immunohematological (blood banking), biophysical, chemical, hematological, toxicological, cytological or pathological examinations of materials derived from the human body for the purpose of providing information for aiding in the diagnosis, prevention or treatment of disease, or the assessment of medical condition. Laboratories operated by one or two physicians primarily for their own patients are not within the scope of this definition because procedures performed under these conditions are considered physicians' services rather than medical laboratory services. (There are 117 laboratories in Montana which fall within this definition of a "Medical Laboratory".)

Functions of state laboratories have changed because routine testing for communicable diseases is being carried out more in local laboratories while state laboratories serve as sources for referral, consultation, and laboratory improvement. Purposes for existence of the Microbiology Laboratory Division of the Montana State Department of Health are:

1. To serve as a reference laboratory for microbiology. This includes identification of microorganisms isolated by other laboratories, virological testing, and special serology.

2. To administer laws and regulations involving laboratory procedures and to perform tests, when necessary, in conformity with such regulations. This includes the Prenatal and Premarital Examination Laws for syphilis and the approval of laboratories performing serological tests under these laws; the registration of laboratories performing tests for the presence of an infectious agent; laws requiring periodic bacteriological analysis of public water supplies and approval of laboratories performing such tests; the law requiring newborn infants to be tested for phenylketonuria; and the federal law requiring certification of independent laboratories to perform tests under the "Medicare" Program.

3. To promote improvement of medical laboratory services in Montana. This is accomplished through legislation for licensing of laboratories and medical laboratory personnel; by organizing and participating in workshops for medical technologists; by providing proficiency testing and quality control programs; by cooperating with the university system in the "Allied Medical Sciences" program to increase the supply of qualified medical laboratory workers; and by cooperation with the Regional Medical Program and professional societies in their efforts to improve the quality of personnel.

4. To furnish laboratory services and consultation for developmental programs. At present these are the eradication of tuberculosis; the elimination of rheumatic fever; the control of venereal disease; and special epidemiological studies for Disease Control Division.

5. To participate in "Comprehensive Health Planning" and the "Partnership for Health Amendments". Aims of these are to improve service to the people and to make the benefits of advances in medical science more rapidly and readily available to ALL.
(A FUTURE BULLETIN WILL DEAL WITH REGISTRATION/CERTIFICATION/APPROVAL/LAWS)

LABORATORY BULLETIN

MONTANA STATE DEPARTMENT OF HEALTH

HELENA, MONTANA

SEROLOGIC TESTS FOR SYPHILIS
NO. 2 - February 15, 1968

The Microbiology Laboratory has discontinued the Kolmer-Wassermann complement fixation test for syphilis. Relatively few laboratories in the U.S. still use it. Both the Kolmer test and the Venereal Disease Research Laboratory (VDRL) Test depend upon reaction of an antibody-like substance or "reagin" in patient's serum with a cardiolipin-lecithin antigen obtained by chemical extraction of beef heart. These tests usually yield identical results and both give troublesome reactions commonly known as "biologic" false positives. Because we have available a test depending on a specific antigen-antibody reaction to check results obtained in the VDRL test, there is little point in performing two reagin-based tests.

The specific test which depends upon the reaction of treponemal antibody with treponemal antigen is the Fluorescent Treponemal Antibody-Absorption test (FTA-ABS). Reagents for performing this test are expensive and it is a time consuming procedure so selective criteria for its use must be established. Ordinarily these will be:

a. If a serum is reactive in the VDRL test, it will be retested in a quantitative VDRL test.

b. If a reaction is obtained in the quantitative test, a second specimen will be requested.

c. The VDRL qualitative and quantitative tests will be performed on the repeat specimen.

d. If the second serum is reactive, an FTA - ABS test will be performed except when it is from a previously diagnosed case of syphilis, a treated case, or a known biological false-positive reactor.

Exceptions to the above schedule will occasionally be indicated so please attach an explanatory note to the request form when this is necessary. A bulletin of the U.S. Department of Health, Education and Welfare, "Laboratory Aspects of Syphilis", is available from the Disease Control Division on request.

The lead article in the Medical News section of the January 1, 1968 JAMA deals with the greater sensitivity of the FTA - ABS test when applied to an ophthalmological problem. We are attempting to obtain an evaluation of this. With one microbiologist in our VD section and the high cost of reagents, the number of FTA - ABS tests we can perform at present is limited.

For those performing VDRL tests, the following lots of antigen have been tested by the VD Research Laboratory and are of standard reactivity:
Difco Laboratories Control 500129 and Control 500130; Lederle Laboratories Control 164-150 (lot no. 2740-74); Texas Biological Laboratory CK7-24 and BK7-20.

LABORATORY BULLETIN

MONTANA STATE DEPARTMENT OF HEALTH
HELENA, MONTANA

No. 1 - January 1, 1968.

VIRUS INFLUENZA

I. Submission of specimens for diagnostic testing to Microbiology Laboratory, Montana State Department of Health, Helena, Montana 59601.

A. Specimens for attempted isolation of virus.

1. Swab the patient's throat with two dry cotton swabs trying to get as much exudate from the back of the oral cavity as possible.
2. Place the swabs in a vial of tryptose phosphate broth with 0.5% gelatin. Break off the ends of the applicator sticks aseptically so that the vial cap can be replaced, tightly.
3. Place the specimen in the refrigerator and ship to the laboratory by the next mail. If the time required to reach Helena is over 18 hours, the specimen must be refrigerated with ice cubes in a plastic bag; however, we anticipate that it will be possible to get specimens from all parts of Montana within this time if they are mailed promptly.
4. The specimens are inoculated into 11-day embryonated eggs for growth of virus. Five-day post-inoculation fluids from the eggs are checked for virus by hemagglutination of chicken red blood cells.

Sterile swabs and vials of collection medium can be obtained on request to the State Laboratory.

B. Specimens for serologic tests.

1. 5 cc of blood should be drawn with a dry sterile syringe and placed in a sterile tube as soon as influenza is suspected. This should be shipped to the laboratory as whole clotted blood or serum. Specimens for serological testing should also be collected on all cases in which throat swabs for viral isolation have been submitted.
2. In two weeks another blood specimen should be similarly drawn and sent to the laboratory because it is only by demonstrating a rise in antibody titer that a diagnosis of viral influenza may be confirmed.
3. The serums are tested in complement fixation with influenza antigens of Group A and Group B.

Standard VD mailing vials may be used for submission of specimens or tubes may be obtained on request to the State Laboratory.

II. Some indications of Viral Influenza.

A. Multiple cases of febrile respiratory illness with headache and muscular pains. Specimens for isolation of virus should be taken at time of fever because influenza virus persists in the naso-pharynx for only about 48 hours.

B. During an epidemic there may be atypical cases not having fever or muscular aching but the start of an epidemic is best detected by occurrence of URI with fever.

III. Identification of influenza virus in Montana, 1956-1966.

1956 - March - Hamilton - Virus identified as Group A, type A_1 - First detected among high school students.

1957 - March - Student body, University of Idaho, Moscow, Idaho - Virus identified as Group A, type A_1 - This is the Group A virus prevalent during the last part of WW II and up until "Asian" appeared in 1957. This is the last epidemic in the Intermountain area proven to be due to this type.

1957 - September - Crow Indian Reservation, University of Montana football team during pre-season practice, and University of Montana Freshmen Camp - Virus identified as Group A, type A_2 (Asian) - first appearance of "Asian" influenza in Montana.

1957 - October - second week - Asian influenza cases reached peak occurrence - particularly noticeable in the schools.

1959 - March - Hamilton - Virus identified as influenza Group B.

1960 - February - Third week - Hamilton - Virus identified as Group A, type A_2. This is the earliest time of the year influenza virus has been observed in Montana.

1962 - March - Virus not isolated but cases identified serologically as being Group B influenza.

1963 - April - Hamilton - Virus identified as Group A, type A_2.

1964 - March, April - Hamilton - Virus identified as Group A, type A_2 1963 variant - first appearance of the new variant of "Asian" in Montana.

1966 - March - Hamilton - Virus identified as Group A, type A_2 variant and designated as a prototype suitable for use in vaccine because it stimulated very broadly reacting antibody (strain registered as A_2/Montana/1/66).

1966 - March - Hamilton - Virus identified as influenza Group B. This is the first time in recent years that multiple cases identified as Group A and Group B have occurred simultaneously.

1968 - We normally would expect an outbreak of viral influenza in March; however influenza cases identified as being caused by Group A, type A_2 influenza virus have been reported from Michigan, Florida, New Jersey, New York, and Illinois and outbreaks suspected of being due to influenza virus are occurring in Indiana, Oklahoma, and Alabama. Because of people returning to Montana for the holidays, we could experience an outbreak of viral influenza NOW.

MONTANA STATE DEPARTMENT OF HEALTH
Microbiology Laboratory, Helena, Montana 59601

TUBERCULOSIS CULTURE AND MYCOLOGY

Patient's Name: | Age: | Sex:

Patient's Address: | Specimen No.:

Purpose of Examination:
_____ Diagnostic--suspected case
_____ Contact of known or suspected case
_____ Treatment follow-up
_____ Culture for fungi

To be filled out by physician
Date Specimen collected: Month _____ Day _____ Year _____

SPECIMEN:
_____ Sputum
_____ Natural
_____ Nebulized
_____ Gastric
_____ Urine
_____ Spinal
Other _____
_____
_____
specify

IS PATIENT ON THERAPY?
If yes, which drugs:
_____ INH
_____ PAS
_____ STREP.
OTHER _____
_____
_____
specify

For Dr. _____

_____

_____ Montana,

_____ First
_____ Repeat
Date last specimen submitted: _____

SPECIMEN UNSATISFACTORY BECAUSE:
_____ Insufficient Amount
_____ Leaked in Transit
_____ Improper Container
_____ Contaminated

DRUG SUSCEPTIBILITY TEST IN 7H-10 AGAR
_____ Direct _____ Indirect

Drug (ug/ml)	Growth* at Dils.		Percent of Pop.

REPORT: MICROSCOPIC EXAMINATION
_____ Ziehl-Neelsen _____ Fluorochrome

_____ ACID FAST BACILLI FOUND
_____ ACID FAST BACILLI NOT FOUND

FUNGI OR YEAST: _____ FOUND
_____ NOT FOUND

ADDITIONAL REPORT(S) WILL FOLLOW WITHIN 8 WEEKS

CULTURE:
Progress Report:

*4+ => 500, 3+ = 200-500, 2+ = 100-200, 1+ = 50-100
<50 recorded & followed by "C", as 10C = 10 colonies

INTERPRETATION:

FINAL REPORT:

Date Received: Date Reported: 1st. 2nd. 3rd.

David B. Lackman, Ph.D., Director
Microbiology Laboratory

MONTANA STATE DEPARTMENT OF HEALTH
Microbiology Laboratory, Helena, Montana 59601

VIRAL, RICKETTSIAL, AND CHLAMYDIAL EXAMINATIONS

Patient's Name | Age | Sex

Patient's Address

Date of First Specimen | Date of Onset

For Dr.

Montana,

Specimen	Number	Date Taken	Date Received
1st.			
2nd.			
3rd.			
4th			
Other:			

Additional Comments:

Type of Specimen:
Rectal Swabs (or feces)____, Throat Swabs (or washings)____, Blood____, Serum____,
Other

Chief Clinical Findings: (check system involved and list chief symptoms)
( ) Respiratory Pleurodynia:
( ) Central Nervous System
Spinal fluid cell count
( ) Cutaneous eruptions - location and type
( ) Gastrointestinal
( ) Cardiovascular
( ) Other Fever:
( ) Clinical impression
(Rectal swabs are required for the enteroviruses: Polio, Coxsackie, and ECHO viruses, because serologic tests for these are not available.)

DO NOT WRITE BELOW THIS LINE

LABORATORY RESULTS:

Serologic Tests					Virus Isolation	
Antigen	Type Test	Acute Spec.	Conv. Spec.	Add'l Spec.	Type Test	Result

Interpretation or Comments:

Date Reported:

VIROLOGY UNIT
Microbiology Laboratory Division
Montana State Department of Health
Helena, Montana 59601

This will acknowledge receipt on _____ 19__ of an acute-phase blood specimen from_____ .
Our No._____ .

This will serve to remind you that a convalescent-phase specimen should be submitted in_____ days (about _____ 19 __.)

If possible, we would like the following additional information on this patient: _____
_____
_____
_____
_____